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Policy

The U. S. Navy Medical News Letter is basically an official Medical Department publication inviting the attention of officers of the Medical Department of the Regular Navy and Naval Reserve to timely up-to-date items of official and professional interest relative to medicine, dentistry, and allied sciences. The amount of information used is only that necessary to inform adequately officers of the Medical Department of the existence and source of such information. The items used are neither intended to be nor susceptible to use by any officer as a substitute for any item or article in its original form. All readers of the News Letter are urged to obtain the original of those items of particular interest to the individual.

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Cough Syncope

The clinical entity of cough syncope, described largely in foreign writings and reported under a variety of names in obscure journals, is not well known to American physicians. Recent cardiodynamic studies of the syndrome by McCann and colleagues stimulated interest, but there is no full description of the clinical picture in the American literature. From the authors' personal observation of 25 examples of the condition a distinct clinical syndrome has crystallized.

The entity, a syndrome, not a disease, is directly defined as loss of consciousness preceded by coughing. The syndrome is most common in middle-aged males.

The patients are pyknic and slightly obese, of an outgoing personality, and frequently overindulge in tobacco, alcohol, and food. Many of them are salesmen, or food or liquor dealers. Four of the authors' patients and 5% of the recorded cases were physicians. They have frequent infections of the respiratory tract and often pulmonary emphysema or bronchial asthma. The syncope is sudden, and is noteworthy for its occurrence in any position. Recovery of consciousness is rapid and sequelae are minimal.

The average age of onset of the syndrome in the authors' group was 47 years. Of 290 reported patients, 97% were males, and none of the authors' cases occurred in women. Five of the authors' cases were in Negroes. Only 2 of their patients were thin; the others were robust, strong, large-chested, and slightly obese. Several weighed more than 200 pounds although they were less than 5 feet 8 inches tall. Specific inquiry regarding smoking was answered in the affirmative by 35 patients questioned; most classified themselves as heavy smokers. Alcohol was used by all but 4 of the 33 men asked. In many it was used liberally but in none was addiction present.

Chronic emphysema or bronchial asthma is usually present. As a complication of the latter, syncope after cough occurs in about 8% of adult patients. The syndrome was noted by Heberden as a feature of pertussis in adults.

The cough is dry, unproductive in nature, often a cascading paroxysm accompanied by extremely vigorous muscular efforts. At times only one sharp bark precedes syncope. Burning or tingling in the laryngeal region is described by some at the onset of cough.

The phrase "blackout" is frequently used by patients in describing the syncope. Use of the phrase has been helpful in eliciting the clinical history. For each attack in which consciousness is lost there may be many minor episodes of giddiness and diminished vision. Usually after a few coughs there is no desire to breathe, a little giddiness and dimness of vision, and suddenly consciousness is lost. Muscle relaxation is complete. If standing the patient falls; if sitting, he slumps in his chair; if lying down, his head rolls back. The face is turgid and congested, later becoming pale. Diaphoresis often ensues. Convulsions, which occur in less than 10%, are clonic in type and often limited. The duration of the attack is brief, often only a few seconds. Frequently the patient arises and resumes his activity or conversation, being able to recall only having coughed. The attack is generally regarded as of little consequence, a factor accounting for the apparent low incidence of the syndrome. In many instances the sensation is described as pleasant. Contrasted with certain other types of syncope, more than half of the attacks occur in the lying or sitting position. A common time of onset is during or immediately after a heavy meal. A little warning, sufficient to prevent serious injury, is experienced by some. A still smaller number feel able to abort an attack by holding the breath, or firmly grasping an object for support.

The number of attacks is exceedingly variable. Some patients have but one attack, others have as many as 20 to 30 per day. The attacks vary with the course of the underlying respiratory disease, and when this is self-limited or remediable they disappear with its passing. In recurrent chronic diseases many attacks occur over several decades.

Although the attacks are generally stated to be benign, the authors have witnessed 1 death during an attack. Another reliable instance has been reported to the authors, and 2 other clear examples have been recorded. These were in patients with serious cardiovascular disease.

Treatment consists of eradicating the underlying cause of cough when feasible. One of the authors' cases had no recurrences after lobectomy for chronic bronchiectasis. Attempts to diminish the sensitivity of the cough reflex are indicated. Cocainization of particularly sensitive areas has been successful. Procaine block of the superior laryngeal nerve has been useful in stubborn situations. Smoking and excess alcohol should be discouraged.

In obese patients, weight reduction should be urged. A trial of atropine in full doses is warranted, but has not been useful in the authors' patients. No drug is capable of directly offsetting the adverse effects of pulmonary hypertension and peripheral hypotension simultaneously.

No therapy is indicated during the attack. Patients with self-limited causes of cough may be treated expectantly and optimistically. In those with serious cardiovascular disease, vigorous measures are indicated to forestall a fatality. (Ann. Int. Med., Dec. 1953, A. Kerr, Jr., M.D. and V. J. Derbes, M.D.; Departments of Medicine, Louisiana State University School of Medicine and Tulane University School of Medicine, New Orleans, La.)

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Arachnidism

The black widow spider, the insect responsible for arachnidism, is known to entomologists as Latrodectus mactans and has been reported in every state in this country except Vermont, and is especially prevalent in the southern states, the Ohio Valley, and the western coastal region.

Sole responsibility for biting of humans lies with the adult female whose shiny black body is composed of a minute head, a somewhat larger thorax, and a large oval and globoid abdomen. On the ventral surface of the abdomen is a characteristic hourglass (T-marking) red spot. It is for this reason that the "black widow" is known variously as hourglass, shoe-button, and T-spider. Often at the posterior tip of her abdomen there is a second red marking which is round but this is not quite as consistently found as is the hourglass.

The habitat of Latrodectus mactans is under stones in moist rich earth, lumber piles, dark dry corners of woodsheds, garages, or barns, trash heaps, and especially in outdoor privies. The spider characteristically prefers protected places. More recently they have been seen in large cities.

Latrodectus, whose bite is definitely venomous, seems to be the only truly dangerous member of the spider family. Although many consider that all spiders are poisonous, this is not generally true. As a rule the signs of inflammation produced by the common spider bites are due not to injection of a poison but to infliction of a puncture wound with concomitant introduction of organisms and subsequent local infection.

The venom of the female Latrodectus mactans has been shown to be 15 times as potent as that of the rattlesnake, and is a thick, translucent, oily, lemon yellow-colored fluid, acid in reaction, and from which a hemolysin and arachnolysin have been isolated. Its nature is neither an alkaloid nor a glucoside but a toxalbumin. In regard to its mode and place of action, it is quite generally accepted that the toxin directly stimulates the myoneural junctions or that it acts on nerves and/or nerve endings.

In a typical case of arachnidism the patient gives a history of having felt a bite or sting which may have been ignored, and recalled only when he is questioned directly. The initial pain has a duration locally of from a few seconds to about 5 minutes and then disappears. In some instances a small erythematous patch may be found at the site of injury which may persist for as long as 24 hours or disappear completely within a short time. The onset of the next phase varies usually from 15 minutes to 2 hours, being heralded by the return of pain which then spreads proximally and/or distally, following the lymphatic drainage. When first seen the patient is groaning persistently, is restless, unable to remain still long enough to be examined properly, and appears to be in extreme pain. Although there are fairly generalized cramplike muscular pains, the predominant symptoms--those which color the entire clinical picture--are excruciating and agonizing cramping pains of the abdomen. At this point the abdomen has a boardlike rigidity, but exhibits no localized tenderness upon palpation. There may or may not be generalized abdominal tenderness. Notwithstanding, the severity of the abdominal pain is said to equal or exceed that of ruptured peptic ulcer, kidney colic, acute appendicitis, or coronary occlusion. The muscular pains, unless abated, usually will eventually involve almost all skeletal muscles including those of the abdomen, thighs, legs, feet, and quite frequently those of the chest, shoulders, back, and arms.

Other more variable symptoms of arachnidism include convulsions, paralysis, urinary retention, shock, delirium, cyanosis, nausea, vomiting, dyspnea, anxiety, insomnia, and cold sweats. The temperature, respiration, blood pressure, and pulse have been reported by various authors as being normal, high, or low. Although arachnidism is characterized by its lack of response to sedatives and narcotics in their usual dosages, the acute symptoms usually subside within 6 to 48 hours. However, in the more severe cases, they may either continue or recur with progressively decreasing severity for a number of days, the recurrent pains usually progressing down and out of the lower extremities.

Regardless of the site of the bite, the clinical picture of arachnidism is usually well defined, the sequence of symptoms following a fairly definite pattern. The diagnosis is not difficult if its possibility is kept in mind. Although most cases are fairly typical it must be remembered that there is some variation in severity of symptoms. This is believed by some to be related to the amount of venom injected by the spider, the size of the victim, and, in animals at least, to a relative immunity of the victim to previous bites.

Differential diagnosis should include ruptured abdominal viscera, especially peptic ulcer; acute or fulminating appendicitis, acute pancreatitis; cholelithiasis, nephrolithiasis, and acute intestinal obstruction. Furthermore, various medical conditions such as acute poisoning, tetany, tetanus, gastric crises, and pneumonia may also be differential problems. Any acute medical or surgical condition with abdominal symptomatology may be simulated.

The best and only specific treatment is the antivenin (Antivenin Latrodectus mactans) which has been available for the past 12 years. This is an immune serum prepared by concentrating and drying the serum of horses hyperimmunized with increasing doses of black widow spider venom. It is imperative that instructions with the package be read and followed carefully, particularly in regard to the intradermal and conjunctival tests for hypersensitivity to horse serum. The usual dosage is 2.5 cc. of the restored serum, given deep intramuscularly. However, a number of patients will require an additional 2.5 cc. which may be given 1 or 2 hours later. Evidence indicates that if the antivenin is given a comparatively short time after the bite, it is successful both in relieving pain and in preventing its recurrence in the great majority of cases. It is significant that in spite of a small degree of success with some other methods of treatment, all of these other methods have failed uniformly in one respect, i.e., the prevention of recurrence of pains.

In spite of the toxicity of the venom and in spite of the fact that in one series of 400 cases, 17 deaths were reported, the prognosis is generally considered favorable. Judging from the many reports reviewed, it appears that arachnidism usually results in complete recovery without sequelae. (Mil. Surg., Dec. 1953, E. T. Odom, M.D. and W. Capel, M.D.; Department of Internal Medicine, Veterans Administration Hospital, Tuskegee, Ala.)

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Sting Ray Injuries

Sting rays may reach a weight in excess of 700 pounds. Fortunately, in those areas where they are prevalent, the species most likely to be encountered are of a relatively small size. Off the California coast the ray responsible for the greatest number of stingings is the rather small round sting ray (Urobatis halleri). This animal reaches a length of about 50 cm.; the sting of a 50 cm. ray will measure 6 cm. in length. These fish may possess a secondary sting which is also capable of inflicting an aggravating wound. The little round sting ray lying half buried in the sandy bottom in the surf or the mud flats of the bay is often stepped upon by the unwary bather. The weight of one's foot to the dorsal surface of this fish is sufficient stimulation for the animal to thrust his tail and sting upward and forward into the foot or leg of his victim.

The increasing number of "stinger" victims referred to the physician through the lifeguard services on the beaches appears to confirm the assumption that these services view this problem with respect. During the 7-month period between April and November of 1952, the lifeguard stations from Santa Monica, Calif., south to San Diego, Calif., a distance of about 130 miles, reported approximately 390 cases of sting-ray "attacks." Another

84 victims were treated by their physicians in areas unattended by the beach services. It is reasonable to assume that an additional 50 victims received no medical attention from either of the above sources and recovered from their wounds without particular incident. One-quarter of this total number of cases were seen by a physician some time during the course of their recovery. The incidence of secondary infection was exceedingly low, less than 3%. This was due in part to the early attention rendered by the lifeguard on duty or to his subsequent referral of the victim to a physician. It is the policy of the lifeguard services to advise medical attention for all persons stung by sting rays in which satisfactory recovery is not immediately apparent.

For the most part the symptoms of the venom are local manifestations. There is, however, both clinical and experimental evidence to indicate that the toxin may produce systemic changes and even death. The nausea, faintness, vertigo, and bradycardia so often experienced by the victim within the first few minutes after the accident may be attributed to the primary shock caused by the extreme pain. On the other hand, as pointed out by Russell and van Harreveld, there may be a fall in systemic arterial pressure due to peripheral vasodilatation when small amounts of the toxin are administered intravenously. It is conceivable that this and the related mechanisms may well accentuate, or even precipitate, a transient cerebral anoxia and shock.

Occasionally a patient may complain of pain on respiration, inguinal or axillary pain, or even generalized cramps. Arrhythmias, tremors, and increased nervousness, profuse sweating, diarrhea, and vomiting with acute abdominal pain have all been reported as being associated with the effects of the venom. The frequency at which convulsions have been recorded, however, both clinically and experimentally, indicates that this finding warrants more careful consideration. The mechanism responsible for the convulsive activity has not been identified in the literature. It would appear, from a study of the cardiovascular effects of the venom, that the convulsions may be the result of cerebral anoxia caused by the cardiovascular depression.

The wound itself may be either of the laceration or puncture type. The penetration of the skin and the underlying tissues is usually made in a plane somewhat perpendicular to the skin's surface and is accomplished without serious damage to the surrounding tissues. In withdrawing the spine, however, extensive damage may be done by the serrated edges.

The author has found the following treatment to be the most successful. Until some further insight into the chemistry of the toxin is gleaned, these measures appear to be adequate. As the degree of success depends largely upon the rapidity with which the therapy is instituted, the ideal treatment would be one instituted by the patient himself. The wound should be irrigated immediately with the cold salt water at hand, not only may much of the toxin be washed out by the mechanics of this operation, but the cold water serves both as a vasoconstrictor and as a mild anesthetic agent. A physician, or one properly qualified, may apply a constriction band imme-

diately above the stab site. When the wound has been thoroughly irrigated and no evidence of the sting's epithelial sheath can be seen, the extremity may be submerged in hot water. The water should be maintained at as high a temperature as the patient can tolerate without injury, for 30 minutes to an hour. The addition of various anesthetic and antiseptic agents to the hot water is optional. The author has suggested to the lifeguard services that they might add magnesium sulfate to the water, because of its mild anesthetic properties. Following the soaking procedure the wound should be further debrided, cleansed, and closed with dermal sutures if necessary. An antiseptic and sterile dressing should be applied to the injured area. Preliminary studies indicated that heat may have a detrimental effect on the venom; boiling readily destroys the toxin in vitro. While hot water alleviates the pain produced by the venom, it is not clear whether the mechanism responsible for this effect is one involving changes in the chemistry of the toxin, or one exclusive of such changes.

If this treatment has been instituted early and effectively, there may be no need for administering antibiotics as evidenced by the low rate of secondary infections in the present series. Some physicians, however, recommend penicillin and the appropriate anti-tetanus agents routinely following sting-ray injuries. Occasionally, when all local measures have failed to relieve the pain, or when absorption of the toxin has progressed beyond the applicability of such treatment, the use of intramuscular or intravenous Demerol has been found to be very effective. In those cases where irrigation is contraindicated (where the spine has entered the abdominal or thoracic cavity), the patient should be hospitalized and observed closely following the necessary surgical procedures. The primary shock so often seen immediately following the stinging usually responds to simple supportive measures. However, the secondary shock which occurs as a result of, or from, the direct action of the venom on the cardiovascular system, warrants immediate and strenuous therapy. Treatment in any case should be directed toward maintaining cardiovascular tone and the prevention of any further complicating factors. (Am. J. M. Sc., Dec. 1953, F. E. Russell, M. D., Huntington Institute of Medical Research, Pasadena, Calif.)

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Primary Cardiac Amyloidosis

Primary or atypical amyloidosis has been receiving increasing attention in recent years. In 1935, Reiman and associates proposed the following classification of amyloidosis: (1) secondary amyloidosis, (2) primary amyloidosis, (3) amyloidosis associated with multiple myeloma, and (4) tumor-forming amyloidosis, Secondary amyloidosis was so designated because of

its invariable association with pre-existing disease, such as tuberculosis or chronic suppuration. In this type the deposits of amyloid are most marked in the liver, spleen, kidneys, and adrenals although it may occur in other sites including the heart. Primary or atypical amyloidosis was so named because of its occurrence in the absence of predisposing disease states and because of its "atypical" amyloid distribution. Usually it involves sparingly the abdominal parenchymatous organs whereas heavy depositions in the heart, tongue, gastrointestinal tract, lungs, smooth and skeletal musculature, skin, and lymph nodes are characteristic. Multiple myeloma is accompanied by an amyloid deposition resembling the primary variety in from 6 to 10% of all cases. Tumor-forming amyloidosis is the least common type and occurs as localized tumefactions in the skin and various mucous membranes where it may simulate neoplastic infiltration.

Descriptions of cases showing amyloid localized to the myocardium raise the question as to whether these cases should be classified under a separate category. Factors which tend to favor the formation of a separate category are: (1) primary cardiac amyloidosis occurs in an older age group than systemic primary amyloidosis; (2) although extensive myocardial infiltrations with amyloid are seen in systemic primary amyloidosis, there is also considerable amyloid deposition in other sites. This distribution differs from that in primary cardiac amyloidosis where extracardiac amyloid is either totally absent or present in insignificant amounts in alveolar walls, small vessels, or other sites. (3) In view of the present confused status of amyloidosis in general, establishing a separate category of primary cardiac amyloidosis may prove to be useful in facilitating future investigation of this disease.

With the increasing incidence of post-mortem discovery of cardiac amyloidosis, emphasis has been placed on modes of establishing the diagnosis clinically. It has been stated in the literature that persistent, non-responsive congestive failure in an aged individual, in the absence of hypertension, valvular or coronary arterial disease, or other conditions generally associated with cardiac decompensation should lead one to suspect the presence of cardiac amyloidosis. However, congestive failure occurs in only about one-half of all cases and is resistant to therapy in only the more severe of these. Also, concomitant hypertension occurs in about 20% of the cases and arteriosclerosis occurs with about the normal frequency. Furthermore, valvular lesions have been reported as a result of amyloid infiltration. Consequently, clinically one is reduced to the position of only being able to suspect the diagnosis in a small portion of cases.

Efforts directed at establishing a characteristic electrocardiographic pattern have also been disappointing. The reports of Wessler and Freedberg and Josselson and Pruitt indicate that there are no characteristic findings.

The only laboratory procedure of any diagnostic value in primary amyloidosis is the Congo red test, but this has been positive in less than one-half of the few cases in which it was performed. The low incidence of positive tests has been attributed to the variable tinctorial properties of the amyloid and more especially to the relatively small amount of amyloid which may be present in cardiac amyloidosis. The serum globulin has been elevated in less than 10% of the cases in which it has been determined. There are no characteristic hematologic findings.

In those cases of systemic primary amyloidosis where there is involvement of the skin, tongue, or other superficial tissue a biopsy will reveal the diagnosis, and this is the method by which most of the reported ante-mortem diagnoses were established. There are no reports of gingival biopsy for primary systemic amyloidosis, nor is it known if amyloid commonly occurs in the gingivae in primary systemic amyloidosis.

There is no known treatment for primary amyloidosis, and the disease is uniformly fatal. Remissions and cures of secondary amyloidosis have been reported following successful treatment of the underlying infection. Remissions and even cures have also been reported following therapy with prolonged high dosage of powdered liver extract orally. There are no reports in the literature on the use of this therapy in primary amyloidosis. There is thus no known means at present of dealing with the amyloid per se, and treatment must consist of the usual measures employed in dealing with heart failure. (Am. Heart J., Dec. 1953, A. I. Thomashow, M. D., W. D. Angle, M. D., and T. G. Morrione, M. D.; Departments of Medicine and Pathology of the State University of New York College of Medicine, New York, N. Y.)

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Quinacrine Hydrochloride in the Treatment of Lupus Erythematosus

In a preliminary report the authors indicated that quinacrine hydrochloride (atabrine) has a definite place in the treatment of patients with lupus erythematosus--especially in those with the chronic discoid variety. The authors now wish to report on their additional experience and longer observation of the patients treated.

No one, to the authors' knowledge, knows the reason why patients with lupus erythematosus respond well to the administration of quinacrine. It has been suggested that the fluorescence produced by quinacrine interferes with the activating effect of sunlight on lupus erythematosus. It has been thought that yellowing of the skin by quinacrine was necessary in the production of good results. The authors' experience has been to the contrary, as they have seen excellent results without perceptible yellowing of the skin. A demonstrable fluorescence may be present long before the skin becomes yellow. Lobitz used the fluorescence as a means of controlling

the dosage of quinacrine, as he maintained the daily dose of quinacrine so that the distal portion of the palmar sweat ducts were fluorescent although the skin was not yellow. Increased fluorescence also may be noted in the active portions of the plaques of lupus erythematosus.

In the patients who derived good results from quinacrine, the significant improvement appeared within the first 4 to 6 weeks of therapy. In other words, if some beneficial results were not apparent in the first month of treatment, it was doubtful that any marked degree of benefit would be obtained by the patient.

As yet the authors are not certain which of the various dosage schedules was most effective nor have they decided whether the short or long course of therapy was most beneficial. The individual requirements of patients varied considerably. In some patients the signs of activity in the skin lesions disappeared on doses of 100 mg. of quinacrine daily, while in others larger doses were required. When complete arrest or maximal improvement appeared, the result was maintained on doses as low as 50 mg. daily. The authors do not know that permanent cure was achieved in any of their patients, but in some of them the remissions lasted for 6 months after treatment with quinacrine was discontinued. (Arch. Dermat. & Syph., Dec. 1953, R. R. Kierland, M. D., L. A. Brunsting, M. D., and P. A. O'Leary, M. D.; Section on Dermatology, Mayo Clinic, Rochester, Minn.)

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Heparin Treatment of Patients With Angina Pectoris

The treatment of angina pectoris for many years has been directed toward relief of the heart pain either by increasing the caliber of the diseased coronary arteries or their collaterals with vasodilators or by reducing the work load of the heart. The concepts relating atherogenesis to a defect of lipid metabolism have led to more ambitious therapeutic attempts to halt or even to reverse the development of atherosclerotic lesions in the vessel walls. After an association was found between elevated serum cholesterol levels and the precocious development of coronary atherosclerosis, efforts were made to reduce the serum cholesterol levels, with the hope of preserving and improving the myocardial circulation. Restriction of dietary lipids and treatment with lipotropic agents have been tried for such purposes. These relatively short-term experiments with man have been equivocal or have failed to demonstrate beneficial effects.

An experiment carried out to evaluate the effect of heparin upon the clinical course and the serum lipids of a group of patients with angina pectoris is described.

Patients with a characteristic history of angina pectoris were selected for this study. Angina pectoris was defined as paroxysmal, substernal pain

of limited duration brought on by exertion alone or by exertion and emotional disturbances, and promptly relieved by rest or nitroglycerin tablets. Patients with other causes for chest pain were excluded from the series unless they were able to distinguish clearly the pain of angina pectoris from that of other causes. The selection, clinical management, and observation of these subjects were made by one of the authors (HLC).

Twelve men and 1 woman ranging in age from 34 to 81 years with angina pectoris of 2 months' to 6 years' duration, were the subjects of this investigation. None of them were engaged in full-time, gainful occupation. The subjects were studied for periods extending from 7 to 13 months in a hospital out-patient department. A complete physical examination, x-ray examination of the chest, and electrocardiogram were done on each. Although all subjects showed abnormal resting electrocardiograms, two-step tests with electrocardiograms as standardized by Master et al. were performed repeatedly in 9 cases during the course of the study. After exercise, pain and changes in the electrocardiograms consistent with myocardial anoxia developed in 7 subjects. One subject had pain without electrocardiographic changes and the other demonstrated neither electrocardiographic changes nor pain.

The subjects were observed for from 1 to 4 weeks before the institution of any therapy. During this time examinations were completed, and the severity of angina pectoris was estimated.

After this preliminary period of examination all subjects received 10 cc. of a placebo intravenously twice weekly at intervals of 3 or 4 days. The placebo used was a 5% solution of glucose in water. For the first week of the placebo treatment the clinician knew what medication the subjects were receiving, but the subjects were led to believe that they were receiving possibly effective therapy. At varying times thereafter, which were selected at random, 100 mg. of heparin dissolved in 10 cc. of water was substituted for the placebo by an assistant. The time of this substitution was not known to either the subject or the clinician. During the last 2 or 3 months of the study clinic visits and treatments were arranged on a weekly instead of a semi-weekly basis. Examination of the data disclosed no change in any patient's course as a result of this modification.

Eleven of 13 subjects with angina pectoris experienced moderate to marked relief after the intravenous injection twice weekly of 10 cc. of placebo solution consisting of 5% glucose in water. The substitution of 100 mg. of heparin dissolved in 10 cc. of water for the glucose solution provided no advantage over the use of the placebo in alleviating heart pain.

About 100 days of parenteral treatment was required for most of these subjects to achieve maximal improvement.

This treatment had no persistent or cumulative effects on either the serum cholesterol or the serum $S_f12\text{-}20$ or $S_f20\text{-}100$ classes of lipoprotein.

The intravenous injection of 100 mg. of heparin in ambulatory patients twice weekly for periods up to 151 days and for a total of 1,323 patient days was accompanied by no hemorrhagic disturbances or other untoward effects. (New England J. Med., Dec. 24, 1953, H. L. Chandler, M.D., and G. V. Mann, Sc.D., M.D.; Boston City Hospital, Boston, Mass.)

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Boric-Acid Poisoning

The authors found 105 cases of boric-acid poisoning reported in the literature to date and add 4 cases which they observed. Although some of the reported cases were lacking in detailed description, there was ample evidence upon which a distinctly recognizable clinical picture of acute poisoning could be established and correlated with experimental and pathological findings.

The 4 cases presented illustrate the particular danger of poisoning in infants, following the application of boric-acid preparations to skin eruptions. In one case, the source of intoxication was the repeated application of a popular brand of baby powder, whose active ingredients are talc and boric acid.

The usual story is that of a young infant who develops diarrhea with secondary excoriation of the buttocks. The boric acid is absorbed, and produces not only an increase in the excoriation, but also intensifies the diarrhea and vomiting.

The diagnosis of acute boric-acid poisoning in infants is usually not difficult. The skin manifestations are fairly constant and typical. The erythema is usually intense and may extend over the entire body surface. The palms and soles are often particularly affected, and may give an appearance reminiscent of acrodynia, particularly when conjunctivitis and irritability are present.

The central nervous system signs may raise the possibility of meningitis, particularly in infancy.

The presence of boric acid in the urine or spinal fluid may be rapidly confirmed by the turmeric paper test.

The authors are convinced that many milder cases of boric-acid intoxication go unrecognized. Many physicians can look back on a number of infants with skin eruptions, irritability, some excoriation of the buttocks, and mild gastrointestinal upsets, and wonder about the possibility of boric-acid absorption and toxicity. The reported cases are, for the most part, severe cases with a high mortality. This observation in itself suggests the likelihood that milder cases are frequently missed.

There is very little comment in the literature on the question of specific treatment for boric-acid poisoning. Pfeiffer's group increased the tolerance

of experimental animals to the drug by the intravenous use of large doses of Ringer's solution and plasma, while mannitol, glucose, and glycerol were without antidotal effect. General supportive measures should consist of the treatment of shock with fresh plasma or whole blood, and the maintenance of a good urinary output with intravenous glucose solutions. (J. Pediat., Dec. 1953, R. B. Goldbloom, M. D. and A. Goldbloom, M. D.; Departments of Pediatrics, The Children's Hospital and McGill University, Montreal, Quebec, Canada)

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Gravity and Delayed Ligation of the Umbilical Cord

Numerous articles have been written on the value to the newborn of delayed ligation of the umbilical cord following delivery. Very few, however, have stressed the importance of gravity in the transference of blood from the placenta and its vessels to the infant.

Ninety-four infants were studied in 3 groups. Group A consisted of 23 infants who were weighed on a scale placed 6 inches above the level of the mother while still attached by the cord to the placenta in utero. Group B consisted of 24 infants weighed with the scale at the mother's level while still attached to the placenta. Group C contained 47 infants that were weighed 6, 12, or more inches below the level of the mother while attached to the placenta.

From this study certain observations and comments can be made: (1) While the umbilical cord pulsates vigorously blood will flow from the placenta to the infant in varying amounts, favoring the infant who is held below the mother's level. (2) When the cord stops pulsating or pulsates weakly, the transference of blood from the placental vessels and cord to the infant and vice versa is almost entirely dependent upon gravity. (3) Holding the infant well below the level of the mother for 3 minutes following delivery or until the cord collapses (whichever comes first) will add from 50 to 75% of the available blood in the placental vessels and cord to the infant's blood volume. If the placenta separates while waiting, expressing it and holding it elevated for from 2 to 3 minutes will accomplish the same end more effectively. (4) With the cord pulsating well, a contraction of the uterus around the separated placenta will frequently transfer much of the available placental blood to the infant. (5) Any trauma to the cord (loops around the neck which are slipped over the neck or its resting on the edge of the scale) will hinder the flow of blood. This was frequently seen and was evidenced by intermittent collapsed and dilated segments of cord at the point of trauma. Gently stripping the cord tends to overcome this temporary obstruction which is probably due to a spasm of the vessels. (6) An infant with a lusty cry tends to gain more readily than the apneic or sluggish one. This would be another point in favor of reducing the amount of analgesic drugs used in

labor in conjunction with a general anesthetic. (7) Holding an infant above the mother's level after delivery by cesarean section might result in blood loss toward the placenta if the cord is not pulsating vigorously. This practice should therefore be avoided to prevent possible dangers to the infant. (8) There is no increase in clinical jaundice due to delayed ligation. The infants, moreover, showed fewer complications and appeared more active and in better general health than those in the control series. In those infants who acquired 50 or more grams of blood by delayed ligation, the hemoglobin was on the average 3.4 gm. and the red blood cell count 500,000 more than the controls.

From the evidence as well as from the authors' own results, the importance of practicing delayed cord ligation in all infants is evident. This is particularly true in premature and cesarean infants.

It is not practical to wait for from 10 to 30 minutes before ligating the average umbilical cord as was done in previous experiments, because most deliveries today are carried out under inhalation anesthesia. However, except in cases of emergency or probable erythroblastosis fetalis, physicians can safely delay the ligation of the cord for from 3 to 5 minutes. By holding the infant well below the level of the mother or by delivering the placenta if it should separate very quickly and holding it up for from 1 to 2 minutes especially until after the cord stops pulsating and collapses, the infant can be assured of at least two-thirds of the available blood in the placenta and its vessels. During this time the infant is kept warm and the mucus aspirated by an assistant. The physician's efforts will be rewarded by a healthier, ruddier infant with a better chance for survival. (Am. J. Obst. & Gynec., Dec. 1953, S. Duckman, M.D., H. Merk, M.D., W.X. Lehmann, M.D., and E. Regan, R.N.; Brooklyn Hospital, Brooklyn, N.Y.)

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Ocular Effects of Methyl Alcohol Poisoning

Clinical and pathologic observations on a group of 320 patients with acute methyl alcohol poisoning are reported. There were 37 deaths.

Ophthalmic observations were made by one of the authors (CDB) on a large proportion of the patients immediately upon their admittance to the hospital emergency room. Data were recorded concerning the amount of contaminated whiskey consumed and the date thereof, onset and character of symptoms, the vision, pupillary reaction to light, visual fields (confrontation method), and ophthalmoscopic appearance of the fundi.

Every patient admitted to the hospital was examined daily until discharge and then at gradually increasing intervals. Measurements of visual acuity and central visual fields and observations of the ocular fundi were made at each visit during the 8 months' follow-up period. Patients who were never admitted to the hospital were asked to report to the eye clinic for examination; 123 patients returned for re-examination.

The symptoms of acute methyl alcohol poisoning usually developed 18 to 48 hours after ingestion, but in a few instances transitory symptoms were noted within 1 hour. The patients complained of visual disturbances, weakness, abdominal pain, nausea and vomiting, headache, dizziness, and shortness of breath. Some patients had consumed as little as 90 cc. of the alcoholic mixture and others had drunk as much as 750 cc. Within this range there was no close correlation between the severity of symptoms and the quantity of methyl alcohol consumed.

The initial visual symptoms ranged from spots before the eyes to complete blindness. Many patients complained of whitish or grayish misty vision. The visual acuity was either normal or markedly reduced. The patients with severe visual loss could count fingers only in the midperiphery of their visual field. Three patients who were conscious had no light perception in either eye.

Characteristically, the initially reduced vision showed an early recovery which was in some cases only transitory. Many patients experienced full return of vision during the first hour of treatment by intravenous alkaline fluids. All patients who regained and retained normal visual acuity did so within 6 days after treatment was begun.

If the vision did not return to normal in 6 days, it invariably dropped again to a very low level. Only 3 patients, all nearly or completely blind at the time of hospital admission, failed to exhibit any permanent or temporary improvement in vision.

In the acute phase of poisoning diminution of the pupillary reaction to light occurred in all patients with impaired vision and in many patients with normal vision. The degree of impairment of the pupillary light reflex proved to be of considerable prognostic value. Patients with dilated, fixed pupils usually died; if they recovered, they always had severe visual damage. Lesser degrees of impairment in the pupillary response to light were indicative of a more favorable outcome and no patient with normally reacting pupils had permanent visual loss.

The ophthalmoscopically visible fundus changes were always identical in type and sequence of appearance and varied only in intensity from one patient to the next. A hyperemia of the optic disc could be seen at the time symptoms of visual loss developed. The reddish color of the papilla persisted for from 1 to 7 days.

From 6 to 24 hours after the hyperemia became visible, there developed a whitish striated edema of the disc margins and adjacent retina. Edema was most extensive along the course of the major retinal vessels, and it persisted for from 10 to 60 days. Engorgement of the retinal veins usually accompanied the retinal edema and followed a similar course.

These characteristic fundus changes were seen in 87% of patients with initial visual loss and in every patient who later showed permanent impairment of vision.

Mild or moderate retinal edema was followed by complete recovery of vision in some cases, blindness in others. It was found, however, that all patients who had severe retinal edema and most patients with moderate retinal edema had some degree of permanent visual loss.

In patients with severe ocular damage, an atrophy of the optic disc became visible in from 30 to 60 days. Usually the optic nerve atrophy was identical in appearance to so-called primary optic atrophy, although occasionally a cupping of the nervehead that simulated glaucoma was seen.

In 5 patients there was a striking difference between the visual acuity of the two eyes, even though the ophthalmoscopic changes were always bilaterally equal. In 4 of the 5 such cases, the left eye was the most severely impaired.

The shape of the scotomas offered the explanation of this difference in visual acuity. In the central field of the better eye, the scotoma extended from the blindspot like an open mouth preparing to engulf the fixation area. In the opposite eye, a complete centrocecal scotoma obliterated the area of critical vision. After 4 to 6 months, the visual acuity in the better eye began to decline and approach the level of the other eye.

The typical alteration of the visual field was a centrocecal scotoma of considerable density. Frequently this type of scotoma was incomplete so that it arched above or around the fixation point and did not impair central visual acuity. A few patients had a pericentral or paracentral scotoma not connected with the blindspot. In only 2 patients was the peripheral field constricted in the early stages.

After 2 to 4 months, various and bizarre alterations appeared in the visual fields. Defects of the fiber-bundle type and peripheral constriction usually combined to eliminate all or most of the field of vision. These symptoms and signs are similar to those reported previously by other authors.

Treatment was directed toward the elimination of acidosis in those patients with a low blood CO_2. Bicarbonate of soda was taken by mouth in patients whose symptoms were mild and whose blood CO_2 was between 20 and 25 m. e. q. per liter. Patients with a very low CO_2 and severe symptoms were given soda bicarbonate intravenously.

Because of the strong tendency for acidosis to recur, it was found that alkali therapy had to be continued for a minimum of 3 days, with constant check of the blood CO_2 or urine pH. This was strikingly demonstrated in 4 patients who were treated in the emergency clinic and failed to follow instructions to take soda bicarbonate orally at home. They were brought back the next day in severe acidosis and died.

Adequate correction of acidosis in patients with severe methyl alcohol poisoning will not invariably save life or vision. If the acidosis is severe or has persisted for several hours, death may result in spite of energetic treatment, or, if the patient survives, he may have marked loss of vision.

Also, inadequate alkali therapy may result in a prolonged state of mild or moderate acidosis and permanent loss of vision. (Am. J. Ophthalmol., Dec. 1953, C. D. Benton, Jr., M. D., and F. P. Calhoun, Jr., M. D.; Department of Ophthalmology, Emory University School of Medicine, Atlanta, Ga.)

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One-stage Resection of Cervical Esophagus

A one-stage operation for the treatment of patients with extensive cancer of the pharynx, hypopharynx, postcricoid areas, and cervical esophagus has been developed in the hope of mitigating the morbidity encountered in the treatment of these patients by the multiple-stage method of excision and delayed reconstruction of the pharynx and esophagus. This one-stage operation consists of radical resection of the cancerous growth in the pharynx, esophagus, and neck and immediate re-establishment of continuity between the fenestrae in the oral pharynx and cervical esophagus by the careful anastomosis of a free thick-split skin graft to these structures. The free tubed graft is covered inferiorly with the lobes of the thyroid and superiorly by the associated prevertebral fascia and the skin flaps of the neck. Postoperative contracture is mitigated by the implantation of an inert stent and bouginage.

Patients for whom this type of operation is indicated are divided into those requiring the excisional phase and those requiring the reconstructive phase.

Indications for the excisional phase are: (1) extensive cancer of the cervical esophagus; (2) extensive cancer of the pharynx and hypopharynx; and (3) extensive cancer of the extrinsic larynx and pharynx.

Indications for the reconstructive phase are: (1) resections that have included the entire circumference of the pharyngeal or esophageal apparatus; (2) resections that have included more than 70% of the circumference, thus precluding the immediate formation of a tubed passage with the remaining mucosa; and (3) pharyngeal and esophageal defects which have been unsuccessfully handled with other reconstructive techniques.

The operation is not warranted in areas that have been heavily irradiated or are grossly secondarily infected, as these factors would seriously decrease the chances of a successful "take" of the free graft.

Complications should be minimal and may be classified under the headings: (1) infection, (2) fistula, and (3) stenosis.

Stenosis is the most unpleasant complication, appearing gradually over weeks or months after an apparently successful operation. Armed with the knowledge that contraction of the free graft, hypertrophy of the circumferential scars at the line of anastomosis, and heavy scar formation in the deep areas of the neck are likely to occur, the surgeon may take cer-

tain precautions. The grafts are cut generously, thick-split, then covered with a nourishing tissue bed, and protected with biotherapy. An inert stent is implanted to prevent further the actual contraction which could lead to stenosis. Bouginage may be necessary and is helpful. If stenosis occurs 6 to 12 months after the operation, recurrent cancer must be ruled out. (Arch. Otolaryng., Dec. 1953, J. J. Conley, M. D., Head and Neck Service, Pack Medical Group, and the Surgical Service, St. Vincent's Hospital, New York, N. Y.)

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Treatment of Comminuted Colles' Fracture

The common injuries of the wrist known collectively as Colles' fractures are too often considered of minor importance, and satisfactory results are usually taken for granted. Statistical reports on these fractures, however, reveal a deplorably large percentage of poor results. Follow-up examinations of such injuries show that many patients have permanent deformity and weakness. Although most of the typical Colles' fractures are found to have been corrected, a great many of the comminuted type of fractures of the radius have not been reduced, and permanent disability is the consequence.

There is much confusion in the treatment of fractures near the wrist and in the evaluation of their results, because the term "Colles' fracture" is commonly used for all breaks in the lower end of the radius. The fracture originally described by Abraham Colles is located "one and a half inches above the carpal extremity of the radius," with characteristic posterior displacement of the distal fragment, producing a typical deformity. Surgeons today have no great difficulty in correcting this type of fracture by manipulation and by the application of some form of splinting. The really troublesome injury is characterized by comminution; this is not a Colles' fracture, being more distal and involving the wrist joint. Statistics show that the comminuted fracture is much more common than the true Colles' fracture. The severe squashing of the bone and "telescoping" of the fragments cannot be treated by manipulation; furthermore, even after reduction such a fracture is difficult to immobilize satisfactorily, as it is unstable and there is a decided tendency to redisplacement. Injudicious manipulation not only may fail to reduce the displacement but can even increase the damage to the spongy portion of the bone. Every surgeon remembers cases in which roentgen films of such fractures showed reduction after manipulation and the application of plaster but which later, when the cast was removed, showed recurrence of the deformity. It is evident that the many poor functional results and deformities following fractures of the distal end of the radius are caused by failure to differentiate simple fractures above the

wrist joint (Colles' fractures) from comminuted fractures that involve the wrist joint, and failure to choose the proper treatment for the individual case.

As with other fractures that involve joints, a satisfactory end result depends mainly on complete reduction followed by adequate fixation. The author has simplified the treatment of these injuries by combining the traction-transfixion method originally described by Bohler with simple traction on the thumb as advocated by Carothers and Berning. With the patient's elbow held flexed in an upright position, vertical traction is made on the radius with a finger trap fastened only to the thumb. This corrects the shortening of the radius and the ulnar shift at the wrist. While the pull is maintained, a Kirschner wire of medium thickness is drilled transversely through the metacarpal bone of the thumb, and a similar Kirschner wire is drilled through the upper portion of the shaft of the ulna. Then sheet cotton bandages and plaster are applied in such a manner as to include the two wires. The cast extends from the metacarpophalangeal joints of the fingers to the flexure of the elbow, with the wrist in normal position. Neither the end joint of the thumb nor the elbow joint is included in the plaster. Traction on the thumb is removed after the cast has hardened.

Little follow-up treatment is necessary, because there is a remarkably free range of voluntary movement of the thumb and fingers, and elbow movements are not restricted. The cast should not be changed, because there is a decided tendency toward shifting of the fragments, with recurrence of the deformity. After 8 weeks, when the fracture has united, the plaster and wires are removed; then an anterior splint and an Ace bandage are worn part of the time for 2 additional weeks.

This treatment has been used routinely for comminuted fractures of the distal end of the radius in the fracture service at this hospital during the past 4 years, with satisfactory reduction and good function. There have been no complications, and the patients have been relieved of pain and swelling from the beginning of treatment. (J. Internat. Coll. Surgeons, Nov. 1953, E. O. Geckeler, M. D. Hahnemann Medical College and Hospital, Philadelphia, Pa.)

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Common Duct Stones Remaining After Surgery

The problem of the remaining common duct stones attains considerable significance when one is confronted with the necessity of advising another operation to a patient who has just undergone a recent major surgical procedure. An alternative nonoperative program that offers equal or better results is therefore highly desirable, particularly when one considers the increased morbidity and mortality rates associated with secondary operations on the biliary tract. The purpose of this investigation was to develop a regi-

men with an effectiveness that would warrant its use in this all too frequent problem in which postoperative choledochograms demonstrate the presence of remaining common duct stones. This report concerns the investigation of 113 solutions tested for their solvent action on gallstones and the effect of the most efficient agents on ductal and liver tissue. An improved, simplified biliary flush regimen is also presented.

The condition of the patient, obese, poor risk, with marked edema and adhesions in the area, or imbedded calculi; inadequate light, exposure, or anesthesia; anomalous ductal and vascular patterns, and the skill of the surgeon certainly all materially contribute to the incidence of remaining common duct calculi. Delay in diagnosis and delay in operation for cholelithiasis undoubtedly play a significant role in the incidence of choledocholithiasis.

The nonoperative management of the retained calculus can be classified under these headings: (1) the physiologic biliary flush with hydrocheleretics; (2) administration of solutions for solvent and fragmentation action on stones; and (3) use of sphincter relaxants and anesthetics. These may be used separately or, as is more common, in combination. A T-tube or catheter in place is required if solvent solutions and topical anesthetics are to be used.

There are three basic types of calculi found in the biliary tract--cholesterol, bilirubin pigment, and calcium. Mixed stones may consist of any combination of these substances.

Best and Hicken have demonstrated the flushing action of the biliary tree through the use of dehydrocholic acid products, such as Decholin. With increase in the quantity and the pressure of bile flow through the biliary ductal system, plus sphincter-relaxing agents, calculi, and debris may be washed out of the ductal system into the duodenum. With a T-tube in place, any stones revealed by choledochograms may be further attacked by a solvent solution.

From the authors' investigations they have concluded that chloroform and ether are effective gallstone solvents, room temperature chloroform being somewhat superior and heated chloroform being far superior. If chloroform is used, it should be heated to just under the vaporization point of 61° C. (141.8° F.) and immediately instilled. If ether is used, a patent, nonspastic sphincter is essential, for in the authors' opinion, the vaporization pressure of ether (approximately 224 cc. vapor per 1 cc. of liquid ether) aids the expulsion of stones lying in the terminal common duct. Care should be used in ether instillations to release the pressure at intervals as the pain may be intense and there is always the potential of liver cell damage as a result of sustained intraductal pressure. Alcohol has proved to be ineffective and even detrimental if used in combination with an effective solvent, such as ether.

The authors believe that no single method or solution should be used in an attempt to rid the common duct of remaining calculi but, rather, one should use combinations of all the proved methods. It is important to have

the patient in as good health as possible and with free bile flow prior to employment of any method. This is to safeguard the liver from any possible toxic effect of drugs used.

There were 2 failures in 14 patients treated. In 3 patients, success was attained with the first 3-day biliary flush regimen; the others required several courses before the ductal system was free of stones. Persistence must be employed because repeated courses of treatment are better than the hazards and difficulties of reoperation, without assurance that all remaining stones will be found or removed.

When a T-tube is placed in the common duct as a splint after stricture repair, it is often left in place for long periods. A difficult problem in this situation is to prevent obstruction of the lumen from encrustations and debris. Not too uncommonly the tube must be removed before ordinarily desired because of complete obstruction, thus jeopardizing the repair. To obviate this complication, it is suggested that the physician instill warm chloroform into the T-tube once a month and that the patient be instructed to take the 3-day biliary flush each month. (Arch. Surg., Dec. 1953, R. R. Best, M. D., J. A. Rasmussen, M. D., and C. E. Wilson, M. D.; Departments of Surgery and Anatomy, University of Nebraska College of Medicine, Omaha, Nebr.)

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Panic in Disaster

A tornado smashed through Worcester, Mass., on June 9, 1953, bringing disaster to that densely populated area. Present estimates record 93 dead and about 1,500 injured. Official reports by local and state authorities will be available in the due course of time. In addition, a survey has been initiated by the Committee on Disaster Studies of the National Research Council that should provide an objective and factual appraisal of those aspects of disaster management that are of immediate and practical importance. Without intent to anticipate official findings, it may be noted that newspaper stories and eyewitness accounts have offered a preview of certain happenings that are, unfortunately, all too familiar. Two of these have been chosen for comment.

The first was total lack of an equable distribution of the injured among the hospitals of the region. Rounded up by volunteer workers, the injured were rushed to the nearest hospital. As a result, hospitals close to the tornado's path were swamped by large numbers of injured, while other hospitals nearly as accessible by motor transport, received none. The inevitable result of such faulty distribution is overcrowding, confusion, and delay in the case of the injured.

When unexpected catastrophe occurs in a civilian community, an ideal distribution of the injured cannot be expected. One must work toward this goal, however, by pointing out that under disaster conditions, hospitals close to the scene must not allow themselves to be swamped by the less severely injured who are able to withstand transport to more distant points. Here is a focal point in disaster management that calls for imaginative and realistic thinking.

The other item chosen for comment strikes close to home because it has to do with a surgical error. The predominant pattern of injury was that produced by the powerful and random forces loosed by the demolition of buildings, flying debris, and falling timbers and masonry. The injured showed the results of violent displacement, falls, blows, crush, and laceration by shattered glass and splintering wood. (Burns were not a problem, and prompt action by the public utilities in pulling switches averted what might have been a serious hazard from down and tangled power lines.) Charged with the care of these injuries, doctors furiously sewed up wounds and lacerations. With many unversed in the principles of debridement, handicapped in some instances by rapid depletion of sterile supplies, poor lighting, and a lack of trained assistants, it is not surprising that wound complications were numerous. Dirt, devitalized tissue, foreign bodies, and debris caused early wound breakdown, sepsis, delayed healing, and unsightly scars. Despite a decade of preaching the gospel of the no-primary-suture management of contaminated wounds under combat or disaster conditions, the lesson has not been taken to heart by the profession at large. Here is an educational challenge to the wound-surgeons of recent wars and to those responsible for teaching surgery.

No blame or criticism is to be directed toward the hundreds of volunteer workers, doctors and laymen alike, who plunged into their grim task, motivated only by an overwhelming desire to help the less fortunate members of their communities. A realistic appraisal of their efforts must be made, however, if those lessons that may reduce the loss of life or suffering in some future incident are to be learned. The fact must be faced that decisions made and actions taken under the circumstances of disaster are likely to bear the hallmark of panic, and those responsible for the safety of the community or the care of the injured are the very ones most likely to come under its influence.

Both of the happenings mentioned--someone's decision to keep on packing the injured into the corridors of some overcrowded hospital while other nearby hospitals stood empty, and the misconception held by so many doctors displayed by the suturing of contaminated wounds--bear the diagnostic marks of panic. (Editorial, Ann. Surg., Dec. 1953, East Washington Square, Philadelphia 5, Pa., E. D. Churchill, M. D.)

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Connecticut Program for Safe Aerial Application of Pesticides

The aerial method of application of pesticides is one of increasing popularity. The reasons are not difficult to appreciate. While it formerly took 2 men with a ground sprayer 2 days to cover 100 acres, it now takes aircraft 12 minutes to perform the same task. It is obvious that attention must be paid to the proper protection of pilots and ground crews engaged in the application of poisonous chemicals from the air.

The Connecticut preventive program is based on Section 1620c of the 1953 Supplement to the General Statutes, which makes the health department the licensing authority for crop dusting from the air.

The application for a license to spray pesticides from aircraft contains many questions which include the nature of the chemical to be sprayed, the concentration of the chemical, the make of the aircraft, et cetera.

The Bureau of Industrial Hygiene of the Connecticut State Department of Health which administers the program concentrates on individual control and the environmental protection of the pilots and mixers. Air samples of concentration of insecticides to be sprayed are taken in cockpit or cabin of aircraft in flight during actual spraying operations, in helicopters, and on the ground during the mixing operation.

No license to spray organic phosphorus insecticides from aircraft has been issued in this state since 1952 unless the pilot has first submitted to a blood examination for a base cholinesterase level. These cholinesterase level tests are repeated at weekly intervals during the spraying season and are supplemented by a urinary paranitrophenol determination. The Bureau strongly recommends that a person other than the pilot flying the aircraft do the mixing on the ground and includes the mixers in the preventive program.

When the pilots come for their weekly blood examination, a short discussion of the toxic effects of insecticides is usually held, and pilots and mixers are informed of the result of their tests. If at any time the cholinesterase drops below a critical level or the urinary paranitrophenol rises to undue heights, the pilot is grounded or the mixer is removed from his work until 3 consecutive samples of blood cholinesterase and urinary paranitrophenol have indicated improvement. Two physicians are available at any time in case the men show symptoms. The interest of the pilots is best proved by the fact that several of the pilots kept their own book on cholinesterase levels. During the past 2 seasons, 3 mixers and 1 pilot were removed for varying lengths of time from parathion exposure simply on grounds of laboratory data and were allowed to return to work only after their cholinesterase level had returned to normal and paranitrophenol excretion had decreased considerably. Some of the results of these examinations were published in a previous paper.

During 1951, 1952, and 1953, 87,851 acres of woods, marshes, and farm land were sprayed, and each year the area sprayed is somewhat larger.

There was 1 flying accident in Connecticut in 1951 and 1 in 1952. During 1953, there were no accidents. The 2 accidents were carefully investigated and were found to be due to engine failure. One occurred during DDT spraying and the other during parathion spraying of tobacco. In both cases, the pesticides were ruled out as causes of the accidents. In both cases, the pilots escaped uninjured.

The author believes that this program of medical and environmental control has substantially contributed to the good accident record. (Arch. Indust. Hyg., Dec. 1953, J. Lieben, M. D.; Bureau of Industrial Health, Connecticut State Department of Health, Hartford, Conn.)

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Navy Hospital Corpsman Awarded Medal of Honor Posthumously

Hospitalman Francis Colton Hammond, USN, of Alexandria, Va., who sacrificed his life to administer aid to wounded Marines in Korea, was awarded the Medal of Honor in ceremonies at 3 p.m. Tuesday, December 29, 1953.

Secretary of the Navy Robert B. Anderson presented the award to the hero's 3-month-old son, Francis Colton Hammond, Jr., who was accompanied by his mother, Mrs. Phyllis A. Hammond of Alexandria, Va., and relatives and friends of the family.

Hospitalman Hammond was serving with the First Marine Division in Korea on the night of March 26-27, 1953 when he advanced through a curtain of enemy fire to aid stricken Marines pinned down by a murderous mortar and artillery barrage. Though critically wounded, Hammond skillfully directed the evacuation of casualties and remained in the fire-swept area to assist corpsmen of a relieving unit. While thus engaged, he was mortally wounded when struck by enemy mortar fire.

Hammond is the fifth Navy man awarded the Nation's highest decoration for gallantry in action in Korea, and the fourth Navy hospital corpsman to be so honored posthumously. He was born in Alexandria on November 9, 1931, and had served in the Navy since March 20, 1951.

The citation reads:

"For conspicuous gallantry and intrepidity at the risk of his life above and beyond the call of duty as a Medical Corpsman, serving with the First Marine Division, in action against enemy aggressor forces in Korea on the night of 26-27 March 1953. After reaching an intermediate objective during a counterattack against a heavily entrenched and numerically superior hostile force occupying commanding ground on a bitterly contested outpost far in advance of the main line of resistance Hammond's platoon was subjected to a murderous barrage of hostile mortar and artillery fire, followed by a vicious assault by onrushing enemy troops. Resolutely advancing through the veritable curtain of fire to aid his stricken comrades, Hammond moved among the stalwart garrison of Marines and, although critically wounded himself,

valiantly continued to administer aid to the other wounded throughout an exhausting four-hour period. When the unit was ordered to withdraw, he skillfully directed the evacuation of casualties and remained in the fire-swept area to assist the corpsmen of the relieving unit until he was struck by a round of enemy mortar fire and fell, mortally wounded. By his exceptional fortitude, inspiring initiative and self-sacrificing efforts, Hammond undoubtedly saved the lives of many Marines. His great personal valor in the face of overwhelming odds enhances and sustains the finest traditions of the United States Naval Service. He gallantly gave his life for his country."

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Reserve Selection Board for Promotion to Lieutenant Commander

A selection board is scheduled to convene at the Navy Department, Washington, D. C. on or about 26 January 1954 to recommend male officers of the Medical, Dental, and Medical Service Corps on inactive duty in an active status for promotion to lieutenant commander. Those eligible officers who reported for extended active duty on or after 1 July 1953 will also be considered by this board, as will those who were not considered for promotion by an active duty selection board convened during Fiscal Year 1954.

The 1951 Naval Reserve Register number and 1953 Naval Reserve Register number of the junior officer in the promotion zone is as follows:

	1951 Register No.	1953 Register No.
Medical Corps	2435	2067
Dental Corps	2235	1751
Medical Service Corps	494	344

Officers who are within the above promotion zone should take individual action to insure that fitness reports for training duty, annual fitness reports, and annual qualification questionnaires covering periods ending prior to the convening date are submitted to the Bureau of Naval Personnel in time to be included in the officers' records when presented to the selection board.

Naval Reserve medical officers on inactive duty in the grade of captain or commander, as in the past, will constitute the majority membership of the board. (ResDiv, BuMed)

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Refrigeration of Biologicals During Shipment and Storage

The Field Branch of the Bureau of Medicine and Surgery has received several requests for guidance in the refrigeration of biologicals during shipment and storage. Information received from the National Institutes of Health is essentially that no definite regulations can be outlined concerning refrigeration during shipment. Refrigeration during storage should be in strict accordance with the requirements as outlined in the Armed Services Catalog of Medical Material or on the label of the item concerned. In effect all biologicals with the exception of Smallpox Vaccine and Yellow Fever Vaccine should be stored at a temperature between 35.6° and 50° Fahrenheit, preferably at or near the midway point between these temperatures. Smallpox Vaccine and Yellow Fever Vaccine must be stored and shipped in a frozen state, that is below 32° Fahrenheit at all times.

In shipping biologicals it is the general practice to ship them at ambient temperatures not refrigerated with the exception of Smallpox Vaccine and Yellow Fever Vaccine. No significant loss of potency is likely to take place during the shipment periods ordinarily required. When large shipments are made, particularly by water extending over long periods of time, more than a week or 10 days, biologicals should be refrigerated during shipment. In general the same common sense that is used in the storage of perishable foods should be encouraged in all personnel concerned with biologicals.

The loss of potency in biologicals is not a sharply defined action but rather one of gradual loss becoming more rapid when they are maintained at higher temperatures over a period of time. The small loss of potency occurring during shipment without refrigeration within normal limits is adequately provided for by the initial potency date set by the manufacturers. The fact that an item has been off refrigeration for a matter of 24 to 48 hours or even up to 10 days is in no sense an indication that the item is unsuitable for use except in the case of Smallpox Vaccine or Yellow Fever Vaccine, which must be maintained frozen at all times. (MatDiv, BuMed)

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From the Note Book

1. Two of the Navy's Bureau of Medicine and Surgery scientific exhibits will be shown during the month of January 1954. "The Role of the Dentist in Atomic Disaster," will be displayed at the Mid-Winter Meeting of the Denver Dental Association in Denver, Colo., Jan 10-13, 1954. "Career Plan for Naval Dental Officers" will be shown at the University of California College of Dentistry in San Francisco, Calif., Jan 24-25, 1954. (TIO, BuMed)

2. CAPT K. M. Broesamle (DC) USN, District Dental Officer, 15th Naval District, was recently elected President of the Panama Canal Zone Dental Society for the calendar year, 1954. The society is a constituent of the American Dental Association. Its membership of approximately 40 includes civilian dentists associated with the Panama Canal Company and dentists of the United States Armed Forces stationed in the Panama Canal Zone. (TIO, BuMed)

3. CDR A. G. Nielsen (DC) USN, Officer in Charge of Postgraduate Training at the Naval Dental School, NNMC, Bethesda, Md., has been invited to appear as a clinician before the Minneapolis District Dental Society at Minneapolis, Minn., Jan. 21, 1954. The subject of CDR Nielsen's clinic will be "Improved Cavity Preparation Employing Increased Rotary Speeds." (TIO, BuMed)

4. Sixty Naval Reserve dental officers who recently reported for active duty were graduated during December 1953 from the Basic Indoctrination Courses for Naval Dental Officers conducted at the Naval Training Centers, Great Lakes, Ill.; Bainbridge, Md.; and San Diego, Calif. Fourteen dental officers were graduated at Great Lakes, 15 at Bainbridge, and 31 at San Diego. (TIO, BuMed)

5. A study of the course of atopic dermatitis and of wool as a dominant allergic factor appears in the Archives of Dermatology and Syphilology for December 1953, E. D. Osborne, M. D., and P. F. Murray, M. D.; Buffalo School of Medicine, Buffalo, N. Y.

6. A normal weight gain during pregnancy is 20 to 25 pounds or 17% of body weight. The degree of weight gain has no influence on the length of labor. Weight gain per se has very little, if any, influence on the development of toxemia. (Am. J. Obst. & Gynec., Dec. 1953, S. A. Alexander, M. D. and J. T. Downs III, M. D.; Dallas, Tex.)

7. The effect of travel upon the interruption of pregnancy is discussed in the American Journal of Obstetrics and Gynecology for December 1953, J. A. Guilbeau, Jr., M. D. and J. L. Turner, M. D.; Maxwell Air Force Base, Ala. and Keesler Air Force Base, Miss.

8. An analysis was made to determine the number of times specific pathologic entities were found in 1,000 consecutive hysterectomies and the anatomic change necessitating removal of the uterus. In over 95% there was a pathologic basis for the procedure. (Arch. Surg., Dec. 1953, M. C. Wheelock, M. D. and A. Pizzo, M. D., Chicago, Ill.)

9. A case of Marfan's syndrome showing medial degeneration and aneurysmal formation with incomplete rupture of the pulmonary artery is reported with a review of the literature in the American Heart Journal for December 1953, M. Anderson, M. D. and H. R. Pratt-Thomas, M. D.; Medical College of South Carolina, Charleston, S. C.

10. The classification and treatment of allergies of the conjunctiva based on general allergic concepts and on clinical and experimental experiences are discussed in the American Journal of Ophthalmology for December 1953, F. H. Theodore, M. D., New York, N. Y.

11. Eight proteins have been separated by ammonium sulfate precipitation from the sera of different patients with multiple myeloma. The electrophoretic and ultracentrifugal properties of these proteins are summarized. (Cancer Research, Dec. 1953, F. T. Grisolia and P. P. Cohen; University of Wisconsin, Madison, Wisc.)

12. A review of 20,016 needle biopsies of the liver indicates that at present this is the most useful adjunct available for the diagnosis of clinical liver disease. The proper use of needle biopsy can save many lives by permitting early diagnosis and prompt institution of correct therapy. (New England J. Med., Dec. 24, 1953, N. Zamcheck, M. D. and O. Klausenstock, M. D.; Harvard Medical School, Boston, Mass.)

13. Piromen, a complex polysaccharide, is recommended as an adjunct in the therapy of duodenal ulcer in the American Journal of Digestive Diseases for December 1953, W. H. Olson, M. D. and H. Necheles, M. D.; Michael Reese Hospital, Chicago, Ill.

14. The following naval medical officers have recently been certified in their specialties by American Boards: CDR R. O. Canada (MC) USN, American Board of Internal Medicine; LT C. W. Phillips, Jr. (MC) USNR, American Board of Pediatrics; and CAPT J. M. Hanner (MC) USN, Part I, American Board of Thoracic Surgery.

15. The Sixth Annual Symposium on Recent Advances in the Study of Venereal Diseases will be held in the auditorium of the Department of Health, Education, and Welfare, Washington, D. C., on April 29 and 30, 1954. The sessions are open to all physicians and workers in allied professions who are interested in participating. The topics that will be discussed at this symposium will cover many aspects of venereal disease control including basic and clinical research, serology, epidemiology, treatment, program operation, and professional education. (P. H. S., Dept. H. E. W.)

Recent Research Reports Issued by U. S. Naval Research Facilities

Naval Medical Research Institute, NNMC, Bethesda, Md.

1. The Natural History of a Summer Aggregation of Eptesicus fuscus fuscus. Memo Report 53-16, NM 000 018. 07, 21 Aug 1953.
2. Brightness of the Atmosphere: Effects of Cloud Conditions. NM 001 056. 07. 02, 20 Oct 1953.
3. Studies of a Precipitin Reaction Between Soluble Substances Derived From Shigella Flexneri 3 and Homologous Antiserum. Memo Report 53-17 related to NM 005 048. 04, 21 Oct 1953.
4. Infectivity and Gall Size in Tomato and Cucumber Seedlings Infected With Meloidogyne incognita var. Acrita (Root-Knot Nematode). NM 005 048. 21. 02, 21 Aug 1953.
5. Reversible Association Processes of Globular Proteins. VI. The Combination of Trypsin With Soybean Inhibitor. NM 000 018. 06. 29, 20 Oct 1953.

U. S. Naval Medical Research Unit No. 3, Cairo, Egypt

1. Chemical Structure and Molluscicide Activity. NM 005 050. 28. 01, 1953.
2. Ixodes (ceratixodes) uriae White, 1852, Parasitizing Penguins and Sea Birds in the Falkland Islands (Ixodoidea, Ixodidae). NM 005 050. 39. 31, 1953.
3. Closed Vacuum System for Harvesting Infant Mouse Brain. NM 007 082. 13. 08, 1953.
4. Isolation of West Nile Virus From Wild Birds in the Nile Delta of Egypt. NM 007 082. 13. 08, 1953.
5. The Isolation of Coxsackie and Unidentified Viruses From Human Blood and Mosquitoes. NM 007 082. 13. 11, 1953.
6. The Mammals of South Sinai, Egypt. NM 005 050. 39. 32, 1953.
7. A New Locality Record in Africa for the Tick Parasite, Hunterellus hookeri Ashm. NM 005 050. 29. 18, 1953.
8. Provisional Shigella Boydii 10 Infections in Egyptian Children. NM 005 083. 07. 02, 1953.
9. Treatment of Chronic Urinary Salmonella Carriers With Chloramphenicol. NM 005 050. 07. 04, 1953.

Naval Medical Field Research Laboratory, Camp Lejeune, N. C.

1. The Effect of L'Norepinephrine on Minute Volume in the Anesthetized Dog in Hemorrhagic Shock. NM 006 014. 08. 02, Nov. 1953.
2. Quarterly Report of Miscellaneous Tests and Minor Investigations, July-August-September 1953, Part II.
3. The Direct Hydraulic Effect of Intra-Arterial Transfusion: Its Usefulness as a Method of Estimating Peripheral Vascular Resistance. NM 006 014. 07. 02, Dec. 1953.

U. S. Naval School of Aviation Medicine, NAS, Pensacola, Fla.

1. The Generalized Distance Function: A Classification Technique for the Biological and Social Sciences. NM 001 057. 16. 04, 2 July 1953.
2. The Influence of Prolonged Stay in the Dark on Foveal Dark Adaptability. NM 001 059. 30. 01, 12 Oct 1953.

Medical Research Laboratory, Submarine Base, New London, Conn.

1. Recovery Curves and Equinoxious Exposures in Reversible Auditory Fatigue Following Stimulation Up to 140 Db Plus. NM 003 041. 34. 05, 20 Nov 1953.

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BUMED INSTRUCTION 6820. 1A 17 Dec 1953

From: Chief, Bureau of Medicine and Surgery
To: Ships and Stations Not Under Management or Financial Control of the Bureau of Medicine and Surgery Having Medical/Dental Corps Personnel Regularly Assigned

Subj: Medical and dental periodicals; furnishing of

This instruction provides information as to the medical and/or dental journals that will be furnished to addressees. BuMed Inst. 6820. 1 is cancelled.

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BUMED INSTRUCTION 12156. 1 17 Dec 1953

From: Chief, Bureau of Medicine and Surgery
To: Naval Hospitals

Subj: Civilian clinical psychologist positions; allocation of

Ref: (a) USCSC Position Classification Standards for Psychologist Series, GS-180 (Copies may be obtained from the Area Wage and Classification Offices)

This instruction furnishes advice relative to allocation of subject positions and defines Bureau policy governing establishment of subject positions for recruiting purposes.

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Change of Address

Please forward requests for change of address for the News Letter to: Commanding Officer, U. S. Naval Medical School, National Naval Medical Center, Bethesda 14, Maryland, giving full name, rank, corps, and old and new addresses.

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The printing of this publication has been approved by the Director of the Bureau of the Budget, June 23, 1952.

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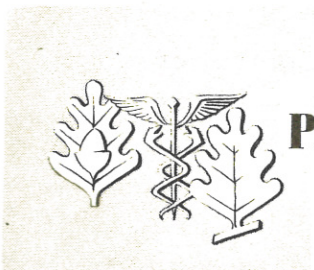

PREVENTIVE MEDICINE SECTION

General Sanitation

Preventive Medicine Laboratory Methods

The U. S. Naval Medical School, Bethesda, Md., with the advice and assistance of the Preventive Medicine Division of the Bureau, has completed a publication in pamphlet form entitled, "Preventive Medicine Laboratory Methods." The initial distribution is under way and will include all ships and stations having medical personnel regularly assigned.

This laboratory handbook is designed for use in performing the tests necessary in the control of sanitation and environmental health. With it as a guide in the performance of these tests, reference to other texts or manuals is unnecessary. The editors were aware of prospective changes in Standard Methods, and the newest techniques are reflected in this pamphlet. The new outline of "Preventive Medicine Laboratory Methods" offers an unusual opportunity to standardize and bring current procedures in line with Standard Methods. The format is similar to that of the "Manual of Naval Preventive Medicine," NavMed P-5010, and is suitable for inclusion in the binder forwarded for the Manual. Also, it may be used independently of

that publication where a specific need for the laboratory information exists. Stock numbers are given in the pamphlet as listed in the forthcoming Armed Services Medical Stock List. Stock numbers in current use may be obtained by utilizing the last 7 digits of the stock numbers given in the new pamphlet.

It will be noted that new forms are included for requesting and reporting bacteriological examination of water; physical and chemical analysis of water; and laboratory analysis of foods. These forms are available from District Publications and Printing Offices. Instructions for procurement of the forms will be issued in a forthcoming BuMed instruction.

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Shortage of Single-Service Milk Containers

In certain localities there is a possibility that the supply of single-service (1/2-pint carton) milk containers may be temporarily curtailed due to fire or labor problems at the manufacturing plants.

As a result ships and stations now purchasing milk in individual containers may be forced to resort to the use of bulk milk for a period of time. It is suggested that, wherever this situation may arise, ship and station medical officers insure that the serving of bulk milk is closely supervised for sanitary handling.

Insect and Rodent Control

Review of BuMed Policies on Toxicity of Pesticides

The policies of the Bureau of Medicine and Surgery in regard to the hazards of pesticides to the health of personnel are outlined in BuMed Instructions 6250. 1 and 6250. 3 and in Chapter 10 of the "Manual of Naval Preventive Medicine," NavMed P-5010. The precautions required are based upon the research and recommendations of toxicologists and pharmacologists of Federal agencies concerned with public health. The instructions and manual provide direction and guidance to the medical officer in carrying out his responsibility to protect the health of the command. It is obvious that no directives or manuals can cover adequately all local variations in conditions and interpretations and that judgment must be exercised by some designated official, in this case the medical officer, with final decision by the commanding officer.

Disagreement as to the necessity for some of the restrictions on the use of pesticides is inevitable and it may well be that in certain cases the precautions are overly conservative. This in no way justifies deliberate short cuts or failure to observe regulations particularly in a military organi-

zation. Sometimes the argument is heard that a certain material has been used in a certain way for so many years without killing anyone. That is like saying you don't need to carry insurance because your house hasn't burned down yet. More liberal instructions on the use of new pesticides will be issued as soon as new recommendations are issued by those agencies with primary cognizance in this field.

The Medical Department of the Navy is attempting to avoid both extremes which are often heard concerning the danger or safety of the new insecticides. On the one hand is the extremists' claim that we are all being slowly poisoned by DDT, and on the other, the attitude that a new material is safe for widespread use unless it has actually been shown to cause illness or death. All too often the danger of an insecticide is assessed only in terms of the acute effect of large doses rather than on long and continuous exposure to very small amounts. The latter occurs when deposits of some types of residual insecticides are applied extensively in living quarters. Short-term animal experiments to determine lethal doses are of little value in determining long-range health hazards, and therefore many years may be required for thorough evaluation of new materials. Environmental sanitation must be as much concerned with the prevention of continuous air or food contamination by chemicals as with fly control.

Less restricted use of new and unproved insecticides (from the standpoint of chronic exposure) may be justified in the presence of a real disease problem. For example, the Public Health Service recommends the use of Dieldrin for residual treatment of homes in areas where the malaria rate is high and DDT or other safe materials are not effective. A 1% lindane dust is used in dusting personnel in Korea for typhus control under certain limitations. This is justified by a real disease threat although the Production and Marketing Administration does not yet approve labeling this item for public sale as a personal dusting powder. Eventually, controlled-use experience such as this and long-range research may provide evidence to justify more liberal use, but in the meantime caution must be a basic policy.

The hazard to operators is quite a different problem and may be avoided best by adequate training. Unfortunately, it is difficult to define just what constitutes adequate training because this will vary with the degree of hazard of each material and operation involved. Certainly, standards of qualification should be much higher today for safe and efficient handling of the many new materials. Official job descriptions for pest control supervisors and operators will be of great help in setting standards. The training conferences held in several districts have done much to improve the qualifications of Navy pest control personnel. The absence of properly trained pest control personnel in most parts of the Naval Establishment has been the chief reason for the restrictions on issue and procurement of certain highly toxic concentrates and nonstandard items. With the establishment of an active pest control section and direction by the Bureau of Yards and Docks in this field, it is expected that transfer of the control of such items from the bureau

to the district level will be possible. This will emphasize further the responsibility of the public works officer to require compliance with current instructions and the responsibility of the medical officer to determine adequacy of precautions, to inspect, and when necessary to report discrepancies.

In reviewing the present policy with respect to the use of some of the new insecticides, a few comments on certain items may be of interest. Chlordane is perhaps the most controversial. None of the public health agencies concerned have recommended any changes as yet in the basic restrictions on the use of chlordane in living quarters--that is, the prohibition on its use as a space spray, as an over-all residual, or in concentrations greater than 2-1/2%. Some questions have been raised concerning interpretation of the restriction on the use of chlordane as given in BuMed Instruction 6250.3. Under 6d(1), it is stated that "chlordane shall not be used in rooms such as bedrooms, playrooms, nurseries, et cetera, if extensively occupied by children under 2 years of age, because of increased susceptibility of young animals to the fumes of this material which are given off for an extended period of time." This has been interpreted in some cases to mean that chlordane could not be used in hospital nurseries and pediatric wards. The intent of this precaution was to avoid continued exposure over a period of months or years such as might occur in the home bedroom, because of the uncertainty as to the chronic effects of so lengthy an exposure to even very small amounts of chlordane in the air. However, an extremely wide margin of safety is included in the published restrictions. The short exposure of a few days or weeks--the duration of the average stay in a hospital nursery--is considered to be perfectly safe according to toxicologists of the Production and Marketing Administration. It is assumed that other restrictions including the important ones concerning over-all residual applications and space spraying are observed.

Similarly, with respect to both lindane and benzene hexachloride, the concern is with their use in the home, although a 0.1% lindane is approved as a space spray. There has been no change in the policy concerning the use of continuous vaporizers as outlined in enclosure (1) to SecNav Instruction 6250.2. It must be remembered that over-all residual applications of lindane will result in a vapor concentration in the air as high as, or higher than that produced by vaporizers. For the present, therefore, in homes and living quarters residual applications of lindane are limited to so-called spot residuals. There is some indication that new research may result eventually in more liberal use of lindane and chlordane. Dieldrin and similar materials are approved for experimental use or special projects under the supervision of highly trained personnel, but at present there is no justification for routine use of these items under most conditions. Moreover, the same restrictions govern the use of organic phosphates and several other types of nonstandard insecticides.

Training and Visual Aids

Graduation Ceremonies at EST School Mark Anniversary

The graduation in November of 15 students by the Environmental Sanitation Technician School at the U. S. Naval Hospital, Oakland, Calif., marked the celebration of the school's third anniversary. The class, which was the school's twelfth, brought the total number of technicians graduated there to 194.

Honorman for his class was Donald R. Moriarty, Hospital Corpsman First Class with an average of 95. 5%. Captain H. A. Gross, Acting Commanding Officer, presented the diplomas. Graduation ceremonies included cutting of a birthday cake by Captain R. S. Poos, who had headed the school since it was established in November 1950.

The environmental sanitation technician has been trained to conduct sanitary inspections. He has been thoroughly schooled in food-service-personnel indoctrination, food inspection, insect and rodent control, venereal disease control, and routine ship and field sanitation. In addition to intense classroom and laboratory instruction he has received practical training in the field under the supervision of leading military and civilian health authorities. As a student he has taken an active part in solving actual health problems through the cooperation of city, county, and State health agencies, private industries, commands of naval establishments and ships. He has not only learned to apply the desired methods and technics of sanitation but also has observed their results.

Besides methods and technics, the EST's training includes bacteriologic and entomologic diagnostic technics and the principles of statistical reporting. Moreover, he has been schooled in correct interviewing procedures, and the principles of good public relations.

In view of the critical shortage of medical officers available to the naval service, it is inevitable that the skills and training of the EST will be utilized more and more as time passes. Wherever the preventive medicine problem warrants, the enlisted technician will be ready to relieve the medical officer of a large burden of technical supervision and kindred responsibilities.

Communicable Disease Control

Influenza Immunization

The Commander of the U. S. Naval Forces in the Marianas reports that 8, 636 Navy, 40 Air Force, and 48 Coast Guard personnel have been immunized against influenza in accordance with BuMed Notice 6230 of 1 Oct 1953, addressed to certain overseas commands. Initial immunizations were completed

prior to 20 Nov 1953. There were only 3 reported reactions, or 0.3 per 1,000 single 1 cc. subcutaneous immunizations. In the past, reactions resulting in hospitalization of patients have occurred at rates as high as 0.3 to 0.5%. A description of the above-mentioned 3 reported reactions follows.

Patient No. 1 was admitted several hours after inoculation with increasing generalized aches, fever, and emotional distress. His oral temperature was 102° F. He became afebrile and subjectively improved on the following day and was returned to duty, clinically well, on the ninth hospital day.

Patient No. 2 was inoculated at approximately 1400 on 5 Nov 1953. At approximately 1825 of the same day, he was brought to the infirmary in delirium. He had a high fever and recurrent tonic convulsions of generalized type. He recovered uneventfully and completely in 48 hours and was returned to duty.

Patient No. 3 was inoculated at approximately 1100 on 10 Nov 1953. At approximately 2227 of the same day, he was brought to the infirmary in a convulsing, irrational state with an axillary temperature of 102° F. He continued to be delirious and hyperirritable for about 2 hours and required Demerol and Nembutal for sedation. He recovered rapidly after going to sleep and returned to duty the next day.

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Leprosy in U.S. Military Personnel

During the thirty-second annual meeting of the American Society of Clinical Pathologists in 1953 in Chicago, members were warned to be on the alert for occasional cases of leprosy among American military personnel who had served in the South Pacific during World War II.

It is on record that leprosy was discovered in veterans of the Spanish-American War 20 years after that war. Moreover, it was reported recently that leprosy had developed in 2 former marines now living in Michigan. Investigation has brought to light the interesting fact that these marines were tattooed by the same individual while stationed in Australia.

Venereal Disease Control

Revised Venereal Disease Epidemiological Contact Report Form (PHS-1421 Rev. 3-53)

The U.S. Public Health Service venereal disease epidemiological report form used in reporting the contacts of venereal disease patients has been revised and is now being distributed through supply channels.

The revised form provides additional space for the recording of information. The additional information will be of great aid to the investigator in locating contacts when the exact name or address is not known or is incomplete. Further, the interviewer's name, instead of his initials, will appear on the report in the space designated. This will facilitate evaluation of the quality of work done by the interviewer. One space on the form is marked "PTNO," standing for "Patient's Number." Ordinarily this number is not used by the Navy, and the space should be left blank.

It will be noted that the third (blue) copy of the report has not been included in the revised form. This copy, which formerly was sent to the district medical officer or senior medical officer of a naval district or river command, will no longer be submitted. Naval districts and river commands will no longer forward completed copies of the report to the Bureau of Medicine and Surgery.

The venereal disease contact investigation program in the United States is the most effective means available for decreasing the reservoir of venereal disease in the population. The current low incidence of venereal disease among naval personnel in this country can be maintained or further reduced only if civilian reservoirs of infection are discovered and chains of infection broken promptly.

In most continental areas, naval medical activities have taken positive measures to improve the contact reporting system. In turn, civilian authorities generally have cooperated by making every effort to locate contacts named, even though in some cases only a minimum of information was available to aid them in identifying and locating contacts.

The effort to improve the quality of contact reporting must be continued by interviewers within the Navy. Antibiotics have provided us with an effective means of curing venereal disease, but it remains for the investigation program to discover the infected in order that they may secure the benefits of such treatment.

Each ship or station periodically should evaluate the results it is obtaining from the contact reporting program. If it is determined that there are factors hampering the location and examination of contacts by local health authorities or that there are other problems concerned with this program which cannot be resolved locally, a complete report of the situation should be made to the DMO or the SMO of the naval district or river command.

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Venereal Disease Posters

Posters for use in venereal disease control programs are no longer distributed by the Bureau of Medicine and Surgery. These posters are now

distributed in the same manner as other educational materials and training aids: by the Training Aids Section of the Bureau of Naval Personnel through district or area training aids centers.

An activity which has not received posters but desires them as a part of the venereal disease control program should request the nearest district or area training aids center for the current series.

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Terramycin, Streptomycin, and Penicillin in Nonspecific Urethritis

In order to compare the abortive power of different drugs against nonspecific urethritis, the incidence of nongonococcic discharges in 451 male patients following treatment of acute gonorrhea with penicillin, streptomycin, and Terramycin was compared. Of these patients, 223 had been treated with single injections of 150,000 units of procaine penicillin G, 47 were treated with single injections of 0.2 to 1 gm. of streptomycin, and 181 were treated (in all but 1 instance) with 2 gm. of Terramycin. The cumulative nongonococcic urethritis rate 3 months following treatment with penicillin was 22.4%, 21.8% with streptomycin, and 16.2% with Terramycin. Results would seem to indicate that penicillin, streptomycin, and Terramycin were ineffective in the doses given in the abortive treatment of nonspecific urethritis. (Am. J. Syph. July 1953, R.R. Willcox)

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Significance of Positive Serologic Tests

This article was written to try to correct a serious tendency of many physicians to diagnose syphilis solely on the basis of positive standard tests. The standard serologic tests, such as Wassermann, Kahn, Kline, Eagle, Hinton, and Mazzini, are nonspecific in that they are based essentially on the reaction of a nonspecific antigen and a nonspecific antibody. Thus, they often produce biologic false-positive reactions that are associated with other infections in addition to syphilis. The treponemal immobilization test is, at the present time, the only practical procedure for detecting latent syphilis with a high degree of specificity and, conversely, for finding which are the false-positive serologic tests. (M. Bull. U.S. Army Europe, July 1953, S. Fried)

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Industrial Medicine

New Safety Manual

"U. S. Navy Safety Precautions," (OpNav 34P1), will be distributed by the Bureau of Medicine and Surgery to the Bureau's management control activities at an early date.

The new manual brings together widely scattered information on safety practices currently in use. It is a result of the directive issued by the Secretary of the Navy on 30 Jan 1948 that the safety precautions instructions be "codified and systematized with the view to their promulgation to the service in a single publication approved by the Secretary of the Navy." The precautions discussed are intended for application throughout the Naval Establishment, both ashore and afloat and by military and civilian personnel alike. The format of the volume is functional--that is, the chapter titles describe work or duty performed, machinery and equipment operated, or materials involved.

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DEPARTMENT OF THE NAVY
BUREAU OF MEDICINE AND SURGERY
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